ABSTRACT OF THE DISCLOSURE

An electromagnetic borehole telemetry system for transmitting information between a borehole transceiver and a surface transceiver located at or near the surface of the earth. Tubulars, such as steel casing and liners, are typically set within the well borehole to stabilize the wall of the borehole and to assist in hydraulically isolating penetrated formations. The invention utilizes these tubulars cooperating with one or more signal wires to reduce attenuation and noise in signals transmitted between the borehole and surface transceivers. The one or more signal wires are typically disposed within an annulus formed by the borehole wall and the outside surface of the casing. The one or more signal wires are connected at one end to one or more connection terminals positioned preferably near the bottom a tubular string. Opposing ends of the one or more signal wires are connected to one or more terminals of the surface transceiver. By minimizing signal attenuation and noise, the telemetry system can be effectively used at greater depths in the borehole. The telemetry system can be embodied in a measurement-while-drilling system, a formation testing system, a production monitoring system and other system requiring communication between a downhole assembly and the surface of the earth.